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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/761,625

01/22/2004

Meng-An Pan

58268.00350

3541

32294 7590 10/19/2007  
SQUIRE, SANDERS & DEMPSEY L.L.P.  
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8000 TOWERS CRESCENT  
TYSONS CORNER, VA 22182

EXAMINER

NGUYEN, TUAN HOANG

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

10/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/761,625

Applicant(s)

PAN ET AL.

Examiner

Tuan H. Nguyen

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Since this application is eligible for the transitional procedure of 37 CFR 1.129(a), and the fee set forth in 37 CFR 1.17(r) has been timely paid, the finality of the previous Office action is hereby withdrawn pursuant to 37 CFR 1.129(a). Applicant's Pre-Appeal Brief Request For Review submission after final filed on 08/24/2007 has been entered. Applicant's arguments, see applicant's remarks, with respect to the rejection(s) of claims 1-17 under 35 U.S.C § 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Pehlke et al. (US PUB. 2002/0136325 hereinafter, "Pehlke") and Hareyama (U.S PAT. 6,700,440).

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1- 5, 8-12, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pehlke et al. (US PUB. 2002/0136325 hereinafter, "Pehlke") in view of Hareyama (U.S PAT. 6,700,440).

Consider claims 1 and 8, Pehlke teaches receiving an instruction to adjust the output power of power amplifier (fig. 4 page 5 [0051]); and amplifying a signal according to the adjusted output power (col. 6 lines 3-23).

Pehlke does not explicitly show that powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power of the amplifier.

In the same field of endeavor, Hareyama teaches powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power of the amplifier (fig. 1 col. 3 line 63 through col. 4 line 6, col. 5 lines 29-58 and col. 6 lines 28-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power of the amplifier, as taught by Hareyama, in order to provide a high frequency power amplifier having further improved efficiency thereof in comparison with a conventional amplifier and having a structure such that its output can be controlled continuously by changes in the drain voltages of switching-driven transistors.

Consider claim 2, Pehlke further teaches transmitting the amplified signal (page 6 [0064]).

Consider claims 3 and 10, Pehlke further teaches the instruction specifies a percentage change in power (page 6 [0066]).

Consider claims 4 and 11, Pehlke further teaches the instruction specifies a dB change in power (page 1 [0007]).

Consider claims 5, Pehlke further teaches the powering on or off a branch of the power amplifier linearly in dB changes the output power of the amplifier (page 6 [0064]).

Consider claim 9, Pehlke teaches a receiving engine capable of receiving an instruction to adjust the output power of power amplifier (fig. 4 page 5 [0051]); and a power amplifier engine, communicatively coupled to the determining engine and the power amplifier, capable of transmitting the determination to the power amplifier (col. 6 lines 3-23).

Pehlke does not explicitly show that a determining engine, communicatively coupled to the receiving engine, capable of determining how many branches of a power amplifier to power on or off according to the received instruction to enable a logarithmic change in output power.

In the same field of endeavor, Hareyama teaches a determining engine, communicatively coupled to the receiving engine, capable of determining how many branches of a power amplifier to power on or off according to the received instruction to enable a logarithmic change in output power (fig. 1 col. 3 line 63 through col. 4 line 6, col. 5 lines 29-58 and col. 6 lines 28-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, a determining engine, communicatively coupled to the receiving engine, capable of determining how many branches of a power amplifier to power on or off according to the received instruction to enable a logarithmic change in output power, as taught by Hareyama, in order to provide a high frequency power amplifier having further improved efficiency thereof in comparison with a conventional amplifier and having a structure such that its output can be controlled continuously by changes in the drain voltages of switching-driven transistors.

Consider claim 12, Pehlke further teaches the powering on or off a branch of the power amplifier linearly in dB changes the output power of the amplifier (page 6 [0064]).

Consider claim 15, Pehlke teaches a power amplifier, comprising: a plurality of branches for controlling transistors (see fig. 2B page 2 [0022]).

Pehlke does not explicitly show that a plurality of transistors, each transistor being communicatively coupled to a branch of the plurality of branches, wherein the

transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor.

In the same field of endeavor, Hareyama teaches a plurality of transistors, each transistor being communicatively coupled to a branch of the plurality of branches, wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor (fig. 1 col. 3 line 63 through col. 4 line 6, col. 5 lines 29-58 and col. 6 lines 28-57).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use, a plurality of transistors, each transistor being communicatively coupled to a branch of the plurality of branches, wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor, as taught by Hareyama, in order to provide a high frequency power amplifier having further improved efficiency thereof in comparison with a conventional amplifier and having a structure such that its output can be controlled continuously by changes in the drain voltages of switching-driven transistors.

Consider claim 16, Pehlke further teaches the powering on or off a branch of the power amplifier linearly in dB changes the output power of the amplifier (page 6 [0064]).

Consider claim 17, Pehlke further teaches a transmitter comprising a power amplifier (col. 15 lines 11-14) (page 6 [0061]).

4. Claims 6-7 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pehlke in view of Hareyama and further in view of Eidson et al. (U.S PAT. 6,255,906 hereinafter "Eidson").

Consider claims 6 and 13, Pehlke and Hareyama in combination, fails to teach thermometer coded power control words are used to power on and off branches of the amplifier.

However, Eidson teaches thermometer coded power control words are used to power on and off branches of the amplifier (col. 5 lines 27-34).

Therefore, it is obvious to one of ordinary skill in the art at the time the invention was made to incorporate the disclosing of Eidson into view of Pehlke and Hareyama in order to provide the power amplifier is operated as a completely digital device with a certain degree of digital pre-distortion compensation.

Consider claims 7 and 14, Eidson further teaches the thermometer coded power control words ensure monotonic power control (col. 5 lines 31-34).

### ***Conclusion***

5. Any response to this action should be mailed to:

Mail Stop \_\_\_\_\_ (Explanation, e.g., Amendment or After-final, etc.)



Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

(571) 273-8300

Hand-delivered responses should be brought to:

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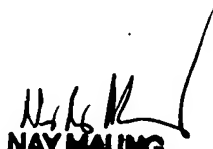
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan H. Nguyen whose telephone number is (571)272-8329. The examiner can normally be reached on 8:00Am - 5:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maung Nay A. can be reached on (571)272-7882882. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information Consider the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan Nguyen  
Examiner  
Art Unit 2618  
T.N.

  
**NAY MAUNG**  
**SUPERVISORY PATENT EXAMINER**